

**REMARKS**

Claims 7-12 are now pending in the application. Claims 7 and 10 have been amended herein to address indefiniteness issues raised in the Office Action. Dependent claims 11-12 have been added. Entry of the amendments and favorable reconsideration of the application is respectfully requested.

***I. APPLICANTS' PREVIOUS RESPONSE***

Applicants previously responded to the Office Action dated February 6, 2003 with a response filed on April 30, 2003. The Examiner responded with an Advisory Action mailed on May 5, 2003.

The Advisory Action indicated that the amendments in the response filed on April 30, 2003 raised new matter issues and were not persuasive. The amendments submitted in the response filed on April 30, 2003 are repeated herein. However, applicants also address herein the issues raised by the Examiner, both with respect to new matter and patentability.

***II. REJECTION OF CLAIMS 7-10 UNDER 35 USC §112, 2<sup>nd</sup> ¶***

Claims 7-10 are rejected under 35 USC §112, second paragraph, as being indefinite. Withdrawal of the rejection is respectfully requested for at least the following reasons.

On page 2 of the Office Action, the Examiner notes the claims should clearly indicate that the "further irradiating" step takes place on a subsequent rotation of the substrate. In accordance with the Examiner's suggestion, claims 7 and 10 have been to recite that the "further irradiating the photoresist film with the same beam" is performed during a subsequent rotation.

Applicants believe such amendments eliminate any indefiniteness in the claims. Withdrawal of the rejection is respectfully requested.

III. *REJECTION OF CLAIMS 7-9 UNDER 35 USC §102(b)*

Claims 7-9 stand rejected under 35 USC §102(b) based on *Kawase*. Withdrawal of the rejection is respectfully requested for at least the following reasons.

The present invention relates to a method for producing an optical disk master. As recited in claim 7, for example, *during a rotation of the substrate* the photoresist film on the substrate is irradiated with the beam so as to form a first beam trace in the photoresist film. Then, *during a rotation which is subsequent to the rotation during which the first beam trace is formed*, the photoresist film is further irradiated with the *same* beam such that the beam partially overlaps the first beam trace, so that a second beam trace is formed in the photoresist film.

Thus, the present invention enables the use of a single beam and thereby eliminates the need for the adjustment of two beams as required in the conventional methods described in the present specification and in *Kawase*. (See, e.g., Spec., p. 29, ln. 21 to p. 30, ln. 1).

*Kawase* discusses an optical data recording medium in which auxiliary clock pits are arranged in such a manner that at least one auxiliary pit is provided in a non-track region between two clock pits adjacent in the radial direction of the optical disk (See, e.g., Abstract). For example, Fig. 1 of *Kawase* illustrates auxiliary clock pits 104 located between adjacent clock pits 101.

The Examiner refers to Column 5, lines 4-14 of *Kawase* as teaching the invention as claimed. Applicants respectfully submit that, at best, *Kawase* is unclear as to precisely how such auxiliary clock pits are formed.

For example, the Examiner appears to highlight the disclosure in *Kawase* relating to forming the clock groove 501. In Fig. 8, the laser beam is deflected radially with a small pitch in such a manner that a number of clock pits 101 overlap each other, thus forming the clock groove 501. The Examiner indicates in such case, the disk is subjected to multiple exposure.

However, *Kawase* does not specifically describe a mechanism for forming a clock groove 501 as shown in Fig. 8. When discussing the embodiment in which a single auxiliary clock pit is placed between clock pits as in Fig. 1, a *two-beam* master

cutting machine is used. When discussing how to perform the embodiment shown in Fig. 8, *Kawase* discusses the difficulty and high manufacturing costs involved.

As a result, *Kawase* at best describes a *two-beam* approach to forming a master (as compared to the *single beam* approach recited in present claim 7) with respect to the embodiment of Fig. 8, or is otherwise non-enabling and therefore a non-enabling reference.

In other words, one having ordinary skill in the art would not understand *Kawase* to teach further irradiating using a single laser beam on subsequent rotations (as recited in claim 7) in order to form the clock groove 501. *Kawase* is at best unclear and therefore non-enabling as to how to carry out the formation of such clock grooves 501 and therefore does not anticipate claim 7.

Regarding the Advisory Action, the Examiner continues to reject claims 7 and 10 even with the amended claim language. The Examiner takes the position that it would be clear to one having ordinary skill in the art that only a single beam cutting apparatus is used for forming more than one intermediate beam as illustrated in Fig. 8, for example.

However, the Examiner is silent as is *Kawase* as to whether such a single beam cutting apparatus would make the additional intermediate beam spots via *subsequent rotations* as recited in the amended claims. For example, a single beam could be radially deflected very rapidly as the optical disk is rotated. Alternatively, the disk rotation may be stopped and the beam deflected radially in order to result in the configurations shown in Fig. 8.

In other words, *Kawase* does not expressly state how the intermediate beam spots are provided. Moreover, *Kawase* does not inherently teach forming a partially overlapping second beam trace during a subsequent rotation using a single beam as seemingly implied in the Examiner's rejection. As pointed out above, the additional intermediate beam spots in *Kawase* could just have well been produced according to some other manner while still using a single beam. The fact that *Kawase* refers to multiple exposures does not necessarily mean using a single beam as recited in the

claims. Each of the alternative methods recited above can be viewed as multiple exposures. Thus, it is improper to rely on *Kawase* as teaching more than it does.

The Examiner also notes in the Office Action that the claims are open ended and are not limited to a single beam. Be that as it may, the claim does recite the same beam performing the irradiation on an initial and subsequent rotation. In that sense, *Kawase* does not teach or suggest the same beam performing the recited steps.

Accordingly, withdrawal of the rejection of claims 7-9 is respectfully requested.

#### **IV. REJECTION OF CLAIMS 7-10 UNDER 35 USC §103(a)**

Claims 7-10 stand rejected under 35 USC §103(a) based on *Kawase* in view of *Van et al.* Withdrawal of the rejection is respectfully requested for at least the following reasons.

*Kawase* does not teach or suggest the use of a same or single beam as recited in claims 7 and 10. Therefore, these claims may be distinguished over *Kawase* for at least the same reasons given above with respect to claim 7.

*Van et al.* does not make up for the deficiencies in *Kawase*. Rather, *Van et al.* is similar to *Kawase* in that *Van et al.* also describes a two-beam master cutting system. (See, e.g., Col. 3, lns. 12-28). *Van et al.* does not teach or suggest using a same or single laser beam on subsequent rotations as recited in claims 7 and 10.

Withdrawal of the rejection is respectfully requested.

#### **V. NEW CLAIMS**

New claims 11-12 are dependent claims further defining the inventions of claims 7 and 10, respectively. Each of these claims emphasizes that the first and second beam traces define a deformed portion of a track that is non-overlapping with an adjacent track.

In the Advisory Action, the Examiner indicates that the language in claims 11 and 12 may not be present in the specification. Claims 11 and 12 recite "the first and second beam traces define a deformed portion of a track that is non-overlapping with

an adjacent track". Support for such amendment may be found, for example, in Fig. 6A of the present application.

Fig. 6A shows a number of tracks 407, each containing a groove region 401 and a land region 405. In particular, Fig. 6A shows the deformed portion 406 of a groove region of a track (e.g., the "first" or "top" track) does not overlap with an adjacent track (e.g., the "second" or "second from the top" track). The description further supports new claims 11 and 12 at page 26, lines 5-15 and page 28, lines 17-26. Accordingly, applicants respectfully submit that the specification does in fact support the language in claims 11 and 12.

*Kawase* describes clock pits adjacent to one another and formed in such a manner to overlap each other, thus providing an auxiliary clock groove extended in a direction perpendicular to the tracks. As can be seen from Fig. 8 of *Kawase*, the first and second traces do not define a deformed portion of a track which is non-overlapping with an adjacent track as recited in claims 11 and 12. Instead, the beam traces of one track overlap with the beam traces of an adjacent track.

*Van et al.* also describes overlapping adjacent tracks. The exposed areas 24 and 25 that are exposed to the beams 21 and 22 constitute an area corresponding to guide grooves 1 of Fig. 1 (i.e., tracks). (See, e.g., Col. 6, Ins. 11-14).

Accordingly, claims 11 and 12 may also be distinguished over the teachings of *Kawase* and *Van et al.*

## **VI. CONCLUSION**

Accordingly, claims 7-12 are believed to be allowable and the application is believed to be in condition for allowance. A prompt action to such end is earnestly solicited.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Serial No.: 09/848,046

Should a petition for an extension of time be necessary for the timely reply to the outstanding Office Action (or if such a petition has been made and an additional extension is necessary), petition is hereby made and the Commissioner is authorized to charge any fees (including additional claim fees) to Deposit Account No. 18-0988.

Respectfully submitted,

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